English Verbs of "Yelling":
A Quantitative Corpus-Based Exploration of Synonymy

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Introduction: The study of synonymy within Cognitive Linguistics has benefited greatly in recent years from the development of quantitative, corpus-based approaches (Divjak & Gries 2006; Arppe 2008; Gries & Divjak 2009; Janda & Solovyev 2009; Gries & Otani 2010), consistent with a more empirical turn in the field as a whole. The Behavioral Profile (BP) technique, as advocated by Divjak & Gries (2006) and Gries & Divjak (2009), is one such corpus-based approach with the potential to reveal intriguing properties of synonyms and visualizations (in the form of dendrograms) of these properties. In this paper, we apply the BP technique to an examination of 10 English synonyms for "yelling": BAWL, BELLOW, HOLLER, HOWL, ROAR, SCREAM, SCREECH, SHOUT, SHRIEK, and YELL. This synonym set was selected because of the large number of synonyms that exist for this meaning. A larger synonym set allows for a more meaningful illustration of the technique.

Method: Two hundred random concordance lines were extracted for each verb from the Contemporary Corpus of American English (COCA: Davies, 2008-). The usage patterns represented by each utterance were coded by means of 15 parameters, which highlighted, for example, subject properties (e.g., animacy, semantic role), object properties (e.g., animacy, semantic role), morphological marking on the verb, and collocates. Some of the synonyms occur with much greater frequency than others, with the most frequent word (SCREAM) occurring 43 times as often as the least frequent word (BAWL). For this study, an equal number of randomly selected sentences was included for each synonym. Gries' BP script (2009) was then utilized to analyze the ways in which these synonyms cluster together.

Results: It was found that the clustering of synonyms that is statistically most supported (as determined by the "silhouette width" measure) is a two-way split between {ROAR, HOWL, SCREECH} and {BAWL, SCREAM, SHRIEK, BELLOW, SHOUT, HOLLER, YELL}. Using a partioning-around-medoids analysis, the medoids for each cluster were identified as SCREECH and SCREAM, respectively. The key parameter differentiating between these clusters, as revealed through "snake-plots" (Gries & Otani 2010), was found to be subject-animacy, with the synonyms in the first cluster tending to have more inanimate subjects (e.g., *the Batmobile screeches into the alley*).

Outcomes: As was the case in Dabrowska's (2009) work, the verbs in this synonym set can be differentiated largely on the basis of the types of arguments that commonly co-occur with these verbs, especially subject argument properties. Nevertheless, it is only when many additional variables are included in the analysis, as is done in BP approach, that the researcher can claim with confidence exactly which variable is influencing most the selection of a particular synonym.

Keywords: Synonymy, Corpus Linguistics, Categorization, Behavioral Profile, Usage-Based